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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/795,844

03/08/2004

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29997/050

1273

29471 7590 09/22/2008
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EXAMINER

BOR, HELENE CATHERINE

ART UNIT

PAPER NUMBER

3768

MAIL DATE

DELIVERY MODE

09/22/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/795,844	Applicant(s) MOCTEZUMA DE LA BARRERA ET AL.	
	Examiner HELENE BOR	Art Unit 3768	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-62 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-62 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>09/20/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 19 Line 4 is objected to because of the following informalities: missing a period at the end of the sentence. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1-36, 38-39, 41-49 & 52-61 are rejected under 35 U.S.C. 102(b) as being anticipated by Williams et al. (US Patent No. 6,314,311 B1).

Claim 1, 33, 38, 41, 52 & 56-57: Williams teaches a light source to illuminate a field of interest comprising: an illumination module (Figure 2, Element 230) comprising a series of digital light projectors (Col. 5, Line 31) capable of projecting illumination light to the field of interest (Col. 5, Line 18-22); a light projector associated with the illumination module an input device associated with the light projector (Figure 2, Element 234); the input device (Figure 2, Element 220) capable of sending signals to the light projector such that the light projector simultaneously projects data light along with the illumination light to the field of interest (Col. 5, Line 59-64) and capturing surface data within the field of interest (Col. 4, Line 17-22).

Claim 2, 11, 13-14, 20-22, 25-26, 44-45 & 58: Williams teaches the light source where the data light displays the location of an instrument relative to a point within the field of

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interest relative to the surgical approach (Col. 6, Line 30-37).

Claim 3 & 43: Williams teaches the light source wherein the field of interest is a surgical field (Col. 1, Line 5-6).

Claim 4-7: Williams teaches the light source that includes a camera system to determine the location of an object within the surgical field (Col. 2, Line 4-7) and the light source that includes a surface scanning module (Figure 3, Element 400). Williams teaches the light source wherein the surface scanning module includes a camera system to facilitate video optical scanning and localization of objects based on the scan information (Col. 6, Line 49-53). Williams teaches the light source that includes at least one video camera to facilitate video-optical scanning (Col. 6, Line 38-41).

Claim 8-10: Williams teaches the light source where the camera system can detect infrared light [IR cameras] from markers placed within the surgical field (Col. 6, Line 38-59). Williams teaches the light source where the markers emit infrared light reflect infrared light (Col. 6, Line 38-59).

Claim 12: Williams teaches the light source where the surgical target was determined pre-operatively from a pre-operative scan (Col. 3, Line 36-60).

Claim 15: Williams teaches the light source where the data light displays anatomical structures [biopsy site] (Claim 13 & Col. 6, Line 34-37).

Claim 16-19: Williams teaches the light source where the data light displays physiological data (Col. 6, Line 17-27) also includes respiration rate (Col. 6, Line 26-27).

Claim 23 & 55: Williams teaches the light source where the data light automatically updates the displays based on the position of the instrument within the surgical field

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(Claim 15).

Claim 24: Williams teaches the light source where the data light is displayed using digital light projection (Col. 5, Line 18-22).

Claim 27 & 47: Williams teaches the light source where the data light displays information in a three dimensional form (Col. 4, Line 63).

Claim 28 & 46: Williams teaches the light source where the light projector comprises a matrix of light projection devices [CCD array] (Col. 6, Line 41) or [1x2 matrix sensor shown in Figure 3, Element 410].

Claim 29: Williams teaches the light source where the light projector is capable of projecting colored light (Col. 5, Line 29-37).

Claim 30-32: Williams teaches the light source that includes an adjustable support structure with automatic or remote control (Col. 6, Line 60- Col. 7, Line 3).

Claim 34: Williams teaches the light source wherein the data light is projected onto a reflective surface associated with a surgical field (Col. 5, Line 13-17).

Claim 35-36, 48-49 & 59-60: Williams teaches the light source wherein visual information delivered by the data light is manipulated to conform to the shape of the surface and changes made to the surface onto which the visual information is projected (Col. 4, Line 43-55).

Claim 39: Williams teaches the light source where the computer is connected to a network [such as another imaging device] (Figure 2, Element 110, 120, 140, 210 & 220).

Claim 51 & 61: Williams teaches the light source wherein the light source is

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automatically moved to optimize the line of sight or the projection of the light (Figure 3, Line 430).

Claim 53: William teaches the method that includes the step of registering the surface data to the data projected from the light projection module (Figure 1, Element 200).

Claim 54: Williams teaches the method that includes the step of tracking the location of the surface data (Col. 6, Line 17-28).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Williams et al. (US Patent No. 6,314,311 B1) as applied to claims 1-36, 38-39, 41-49 & 52-61 above and further in view of Swindler (US Patent No. 5,424,913).

Claim 40: Williams teaches the light source where the light source has control code [inherent in a CPU] and the code is capable of being upgradeable as are CPUs (Figure

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2, Element 220) however Williams does not specifically teach upgradeable software.

Swindler teaches upgrading CPUs over the lifetime of the computer. It would have been obvious to one of ordinary skill in the art to modify the system of Williams to include CPUs capable of upgrades as taught by Swindler since it applies a known technique [upgrading] to a known device [CPU] for improvements to yield predictable results [bug fixes, security updates, new features etc].

7. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Williams et al. (US Patent No. 6,314,311 B1) as applied to claims 1-36, 38-39, 41-49 & 52-61 above and further in view of Cambier et al. (US Patent No. 5,159,361).

Claim 37, 51 & 62: Williams fails to teach calibrating the instrument, however, Cambier teaches the light source wherein the data light is calibrated by stereophotogrammetry using a calibration pattern (Col. 39, Line 10-20) to correct distortions (Col. 40, Line 40-46). It would have been obvious to one of ordinary skill in the art to modify the system of Williams to include calibrating as taught by Cambier to correct distortions (Col. 40, Line 40-46).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Hakamata; Kazuo. US 5772593 A. Surgical operation aiding system, 19980630.

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b. Bieger; Johannes et al. US 6690964 B2. Method and device for visualization of positions and orientation of intracorporeally guided instruments during a surgical intervention, 20040210.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HELENE BOR whose telephone number is (571)272-2947. The examiner can normally be reached on M-T 8:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. B./
Examiner, Art Unit 3768

/Eric F Winakur/
Primary Examiner, Art Unit 3768